



United States Patent and Trademark Office

Applicants: Cain, Robert W.

Application Number: 09/577,766

Examiner: E. M McAvoy

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Art Unit: 1764

For: Mineral Gear Oils and Transmission Fluids

Declaration

Honorable Commissioner of Patents and Trademarks Washington D.C. 20231

Sir,

Robert W. Cain does depose and say that:

1. He is the named inventor of the above-identified application. He received his BS. in Chemistry from Cleveland State University in 1969 and a MS. in Chemistry from Cleveland State University in 1972, and he has worked as a Product Manager for Gear Oils for the assignee of the above-identified application since 1989.

2. The working examples were tested on a modified ASTM D5704 procedure except the experiment was run for up to 300 hours (test also known as L60-1) reported below are actual experiments that fall within the scope of Applicants independent claims and these experiments were conducted under my direct supervision.

3. The oil of lubricating viscosity compositions and L60-1 test data is summarised in Table 1:

Table 1: Composition and Test Data

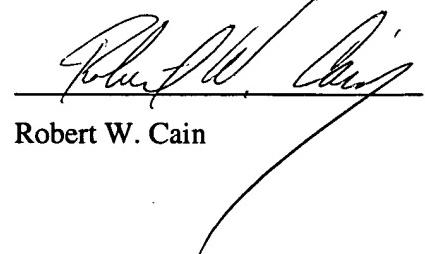
	Composition of Invention (EX1)	Composition of Invention (EX2)	Reference Composition (RF1)
Sulphurised Olefin (wt %)	4.6	4.6	4.6
Olefin Copolymer (wt %)	8.7	8.7	0
Polybutene (wt %)	8.4	8.4	20.5
*UCBO 4 Oil (wt %)	38.5	0	38.5
*UCBO 7 Oil (wt %)	16.5	0	16.5
*Yubase 4	0	38.5	0
*Yubase 6	0	16.5	0
Polyalphaolefin (wt %)	7.2	9	5.6
Other Lubricant additives (wt %)	16.1	14.3	14.3
D5704 Test Data			
Hours	300	300	200
Viscosity Increase (%)	43.0	47.1	103.9
Overall Result	Pass	Pass	Fail

\* These are examples of an oil of lubricating viscosity with a viscosity index of 120 or more, an iodine number of less than 9, a sulphur content of 0.004% by weight to less than 0.5% by weight, and comprising about 95% to 100% by weight saturates wherein at least about 55% of the saturates are aliphatic saturates.

4. The results reported indicate that the oil of lubricating viscosity containing a sulfurized extreme pressure agent an olefin polymer has a viscosity increase of less than 50% after 300 hours. In contrast the reference example containing a polyalkene or derivative thereof and no olefin copolymer fails the L60-1 test after 200 hours with a viscosity increase of 103.9 %. Therefore a composition containing the sulfurized

extreme pressure agent the olefin polymer passes the L60-1 test, whereas the reference example fails the test.

The undersigned declares further that all statements made herein of his knowledge are true and that all statements made on information and belief are believed to be true; and further that wilful false statements are made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

  
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Robert W. Cain